

# FROM SINGLE-USE CODE TO USER-FRIENDLY SCIENTIFIC SOFTWARE

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**single, inflexible use**



**many, flexible uses**



# MOST SCIENTIFIC CODE IS A TO-GO BOX

Only usable once for a single project

Reasons:

Poor organization of files and code

Little to no documentation



# REPRODUCIBILITY TAKES WORK



KristinaRiemer / [MassResponseToTemp](#)

Code Issues 1 Pull requests 0 Projects 0 Wiki Insights Settings

Project started spring 2014 Edit

Manage topics

414 commits 4 branches 1 release 2 contributors

Branch: master New pull request Create new file Upload files Find File Clone or download

KristinaRiemer Update main figures for proofs Latest commit 7bff70d on Dec 7, 2017

Analysis\_VN\_CY.py Add float32 conversion to analysis scripts 2 years ago

Analysis\_VN\_TL.py Add float32 conversion to analysis scripts 2 years ago

A screenshot of a GitHub repository page for 'KristinaRiemer / MassResponseToTemp'. The page shows basic statistics: 414 commits, 4 branches, 1 release, and 2 contributors. It includes navigation links for Code, Issues (1), Pull requests (0), Projects (0), Wiki, Insights, and Settings. A note at the top states 'Project started spring 2014' with an 'Edit' button. Below the stats, there's a 'Manage topics' section. The main content area displays a commit history. The first commit is by KristinaRiemer, updating main figures for proofs, with the latest commit being 7bff70d on December 7, 2017. Two Python files are listed: 'Analysis\_VN\_CY.py' and 'Analysis\_VN\_TL.py', both showing changes related to float32 conversion to analysis scripts, both committed 2 years ago.

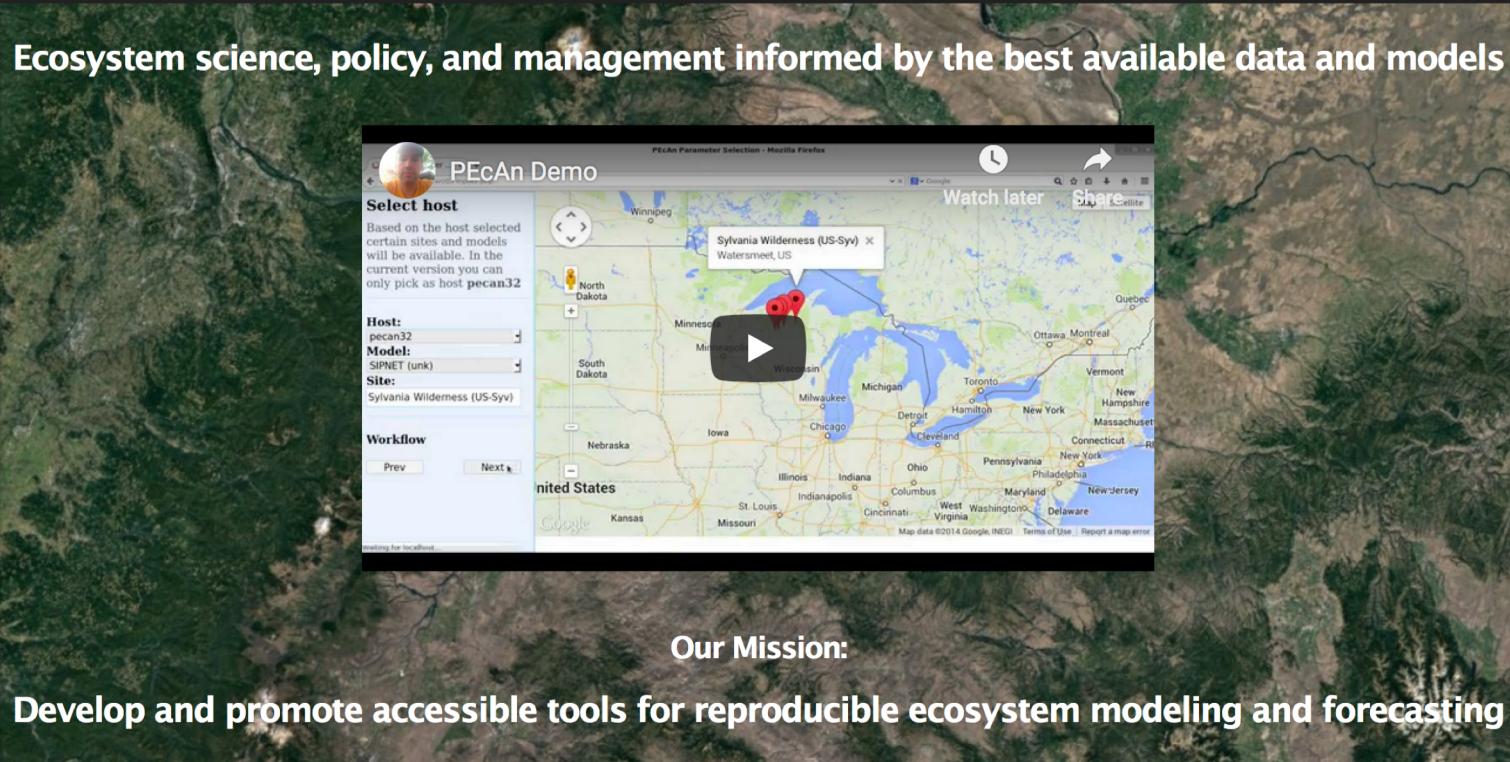


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**SCIENTIFIC SOFTWARE THOUGH!**

# PEcAn

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Ecosystem science, policy, and management informed by the best available data and models

Our Mission:  
Develop and promote accessible tools for reproducible ecosystem modeling and forecasting

PEcAn = Predictive Ecosystem Analyzer

[pecanproject.github.io](http://pecanproject.github.io)

# PROBLEM: DEPENDENCY HELL



PecanProject / pecan

Code Issues Pull requests Projects Insights

Tree: 8d62279292 ▾ pecan / scripts / install\_pecan.sh

robkooper some tweaks to install script 18241fd on Feb 7

4 contributors

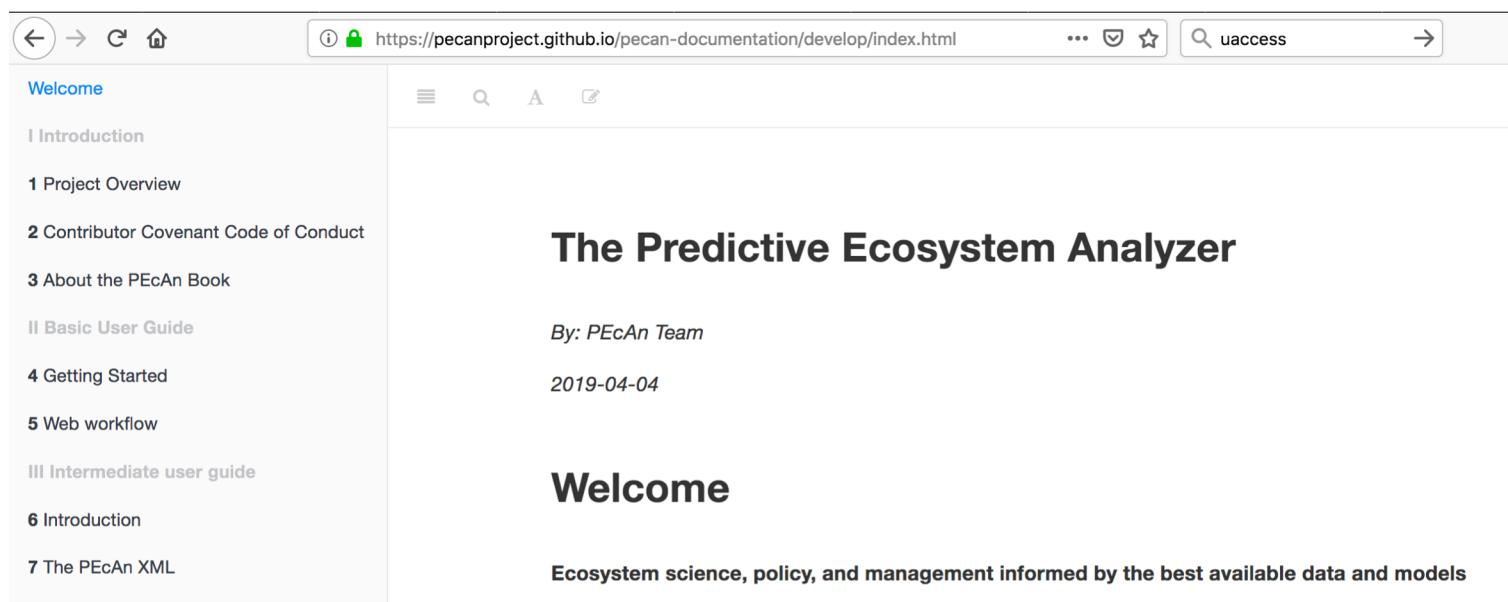
804 lines (713 sloc) 27.5 KB

Raw Blame History

```
1 #!/bin/bash
2
3 set -e
4
5 if [ "`whoami`" == "root" ]; then
6   echo "Don't run this script as root"
7   exit -1
8 fi
9
798
799 # fix prompt
800 sudo sed -i 's/\h/\H/g' /etc/bash.bashrc
801 sudo sed -i 's/\h/\H/g' /etc/profile
802 sed -i 's/\h/\H/g' ${HOME}/.bashrc
803 fi
```

A large red arrow points from the left towards the highlighted code block.

# PROBLEM: GOOD DOCUMENTATION



[pecanproject.github.io/pecan-documentation/](https://pecanproject.github.io/pecan-documentation/)



**PROGRESS NOT PERFECTION!**

## CONTACT ME!

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## UA RESOURCES:



Research Bazaar



CyVerse